

REMARKS/ARGUMENTS

Claims 1-5 and 7-11 are now pending in this application. Claim 6 has been canceled and claims 10 and 11 have been added. The Applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

The Examiner rejected claims 1 - 2 under 35 U.S.C. 102(b) as being anticipated by Furuya (U.S. Patent 5,353,774). This rejection is respectfully traversed.

Amended claim 1 recites that exhaust pipe determining means determines whether water droplets exist in the exhaust pipe when the engine is re-started, based on the preceding operation of the engine. Furthermore, if the exhaust pipe water determining means determines affirmatively, the activation energization controlling means performs activation energization control after a predetermined waiting period passes following the engine re-start.

Furthermore, claim 2 recites that the exhaust pipe water determining means determines affirmatively when an elapsed period from the preceding start to the last stop of the engine is shorter than a predetermined period.

Furuya does not disclose or suggest exhaust pipe determining means that determines whether water droplets exist in the exhaust pipe when the engine is re-started, based on the preceding operation of the engine. In this regard, Furuya teaches that heating of the sensor element is delayed so that the heater is not turned on until it is detected that deviation of the air/fuel ratio sensor output becomes more than a predetermined value after the engine has started. Thus, Furuya differs from the claimed invention in at least two fundamental ways. First, there is no apparent means for determining whether water droplets exist in the exhaust pipe. Rather it appears that Furuya assumes there are water droplets and therefore delays activation of the heater. Secondly, no determining or controlling is performed in Furuya based on the

preceding operation of the engine. All determinations made by Furuya are based on the current operation of the engine following its current start. The independent claims in this application have been revised above to make it clear that the determining means makes its determination based on the prior (preceding) operation of the engine, that is the operation of the engine following a preceding engine start.

Therefore, the rejection of claims 1-2 based on the patent to Furuya should be withdrawn.

The Examiner rejected claims 1 and 3-9 under 35 U.S.C. 102(b) as being anticipated by Schnaibel et al (U.S. Patent 5,616,835). This rejection is respectfully traversed.

As described above, amended claim 1 recites that exhaust pipe determining means determines whether water droplets exist in the exhaust pipe when the engine is re-started, based on the preceding operation of the engine.

Amended claims 4 and 5 recites that water determining means determines whether a water amount in an exhaust pipe is larger than a predetermined amount when the engine is re-started, based on an operation state of the engine at the last time.

In Schnaibel, like Furuya, the determinations are made based on current conditions of the engine such as the temperature of the coolant immediately before or immediately after the internal combustion engine is (currently) started.

Thus, Schnaibel et al. does not disclose or suggest that exhaust pipe determining means determines whether the water amount in the exhaust pipe is larger than a predetermined amount when the engine is restarted, based on an operation state of the engine following the preceding engine start. Therefore, the rejection of claims 1, 4 and 5 based on the patent to Schnaibel et al. should be withdrawn. Furthermore, claims 3

and 7-11 depend on at least one of claims 1, 4 and 5. Therefore, claims 3 and 7-11 are considered to be patentable based on the patentability of claim 1, 4 or 5.

The Examiner rejected claims 1, 3, 8 and 9 under 35 U.S.C. 102(e) as being anticipated by Shimamura et al (U.S. Patent 6,476,364). This rejection is respectfully traversed.

As described above, amended claim 1 recites that exhaust pipe determining means determines whether water droplets exist in the exhaust pipe when the engine is re-started, based on the preceding operation of the engine.


The patent to Shimamura et al. does not disclose or suggest that exhaust pipe determining means determines whether water droplets exist in the exhaust pipe when the engine is re-started, based on the preceding operation of the engine. Therefore, the rejection of claim 1 based on the patent to Shimamura et al. should be withdrawn. Furthermore, claims 3, 8 and 9 depend on at least claim 1. Therefore, claims 3, 8 and 9 are considered to be patentable based on the patentability of claim 1.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

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Respectfully submitted,

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